

REMARKS

Favorable reconsideration of the present patent application is respectfully requested in view of the foregoing amendments and the following remarks.

In this Amendment claims 1, 3, 24 and 34 are amended, and no claims are added or canceled (claims 4-16 and 29-32 were previously canceled). As a result, claims 1-3 and 17-28 and 33-36 remain pending in the application. Support for the claim amendments can be found throughout the specification, for example, at paragraphs [0018], [0019] and [0021], and Figure 2.

In the final Office Action of November 12, 2009, claims 1-3, 18-20, 22-25, 27-28 and 33 are rejected under 35 U.S.C. §103(a) in view of published U.S. Patent Application 2004/0267932 (Voellm) and further in view of published U.S. Patent Application 2004/0042399 (Bly). Claims 17, 21 and 26 are rejected under 35 U.S.C. §103(a) in view of Voellm further in view of Bly and yet even further in view of published U.S. Patent Application 2004/0062259 (Jeffries). Claims 35 and 36 are rejected under 35 U.S.C. §103(a) in view of Voellm further in view of Bly and yet even further in view of U.S. Patent 5,374,644 (Berger).

§103 Rejections

The pending §103 rejections are obviated by the present amendments to independent claims 1, 3 and 24. It is respectfully submitted that the §103 rejection of claims 1-3, 18-20, 22-25 and 27-28 in view of Voellm / Bly and the §103 rejection of claims 17, 21 and 26 in view of Voellm / Bly / Jeffries are overcome, for at least the following reasons.

Execution delays and bus bandwidth shortages affect different classes of software to different degrees. A slowdown situation that may be tolerable for some classes of programs (e.g.,

word processors) can be completely unacceptable for other classes of programs (e.g., games, videos). Inadequate bandwidth for games or videos often results in a distorted display, stilted motion or other less than desirable end results. Various embodiments help to address this issue by allocating bandwidth based on the class of the software application source entities.

The present patent application involves systems, method and computer products for bandwidth management that manages resource access (e.g., access to a bus) by source entities (e.g., software application programs) based on the class of the source entity. A token count based on data packets is kept for each class of software application program source entities. A local bandwidth management table is used to track the local count of each source entity software class. Bandwidth is allocated for a program source entity if there is an available token for the entity's assigned class. The claims recite, among other things, "maintain a local bandwidth management table comprising a local token count for each of a plurality of classes of source entities, wherein said classes of source entities are classes of application programs seeking access to the multiplexed communication path;" "determine that the source entity belongs to a class that is one of the plurality of classes;" "check the local token count for availability of tokens for said class of the source entity;" and "decrement the local token count for the class of the source entity in the local bandwidth management table in response to the transmission;" and "maintain a local bandwidth management table comprising a local token count for each of a plurality of classes of source entities," as recited in claim 1. Claims 3 and 24 recite similar features. The cited art does not allocate bandwidth based on the class of software application programs, and does not check to see that an incoming data packet is from a source entity belonging to a class of software

application programs. Instead, the cited art distributes bandwidth based which one of the processors made the request.

The Voellm published patent document cited first in the Office Action involves a system for dynamically allocating resources based on transactions between client-server computers. Voellm allocates server buffers 209 to clients (e.g., 205) seeking an I/O transaction from the server 201, as discussed at paragraphs [0022] and [0028] of the Voellm document. This is done using “credits” to keep track the transaction requests by the client computer to its server computer, not based on transactions within a class of software program source entities, as explained at paragraph [0028] of Voellm. Thus, Voellm does not teach or suggest the aforementioned claim features, including, for example, to “maintain a local bandwidth management table comprising a local token count for each of a plurality of classes of source entities,” as recited in claim 1, or the similar features of claims 3 and 24, wherein the source entities are application programs.

The other documents cited in the Office Action, Bly and Jeffries, do not overcome these deficiencies of Voellm. Bly involves a data traffic shaping system that groups bandwidth allocations by awarding burst group credits. Bly does this by “assign[ing] each queue 44-47 (FIG. 4) to be a member of one or more of the burst groups” and then the “burst groups 12, 14, 16 are given a selectable allocation of credits at a steady rate.”¹ Since Bly awards credits to burst groups at a steady rate, Bly does not teach or suggest “the plurality of load shapers is further configured to request a token for the class of the source entity from the Bandwidth Management Controller in response to the transmission” or the feature of “decrement[ing] the local token

¹ Bly, paragraph [0019].

count for the class of the source entity in the local bandwidth management table in response to the transmission,” as recited in claim 1, or the similar features of claims 3 and 24 (emphasis added).

The Jeffries published patent document does not teach or suggest the aforementioned claim features for reasons similar to those mentioned above. Jeffries describes the process of incrementing a token counter to allocate bandwidth usage, but does not base the allocations on classes of software paragraph [0034] of Jeffries. Consequently, the Jeffries document does not overcome the deficiencies of Voellm and Bly discussed above.

Accordingly, it is respectfully submitted that Voellm, Bly and Jeffries, either taken singly or in hypothetical combination, do not teach or suggest the claimed features. Therefore, it is respectfully submitted that the pending §103 rejection is overcome.

Deposit Account Authorization / Provisional Time Extension Petition

It is believed that no extension of time is required, and the accompanying RCE Transmittal attends to all the fees necessary for this filing. However, to the extent necessary, a provisional petition for an extension of time under 37 C.F.R. §1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 09-0447 and please credit any excess fees to this deposit account.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. However, in the event there are any unresolved issues, the Examiner is kindly invited to contact applicant's representative, Scott Richardson, by telephone at (571)748-6200 so that such issues may be resolved as expeditiously as possible.

Respectfully submitted,
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Date: February 2, 2010